A BestPractices PUBLICATION ON IMPROVING INDUSTRIAL ENERGY EFFICIENCY

ENERGY MATTERS

July/August 2000

ISSUE FOCUS:
Selling an Energy-Efficient Project to Management

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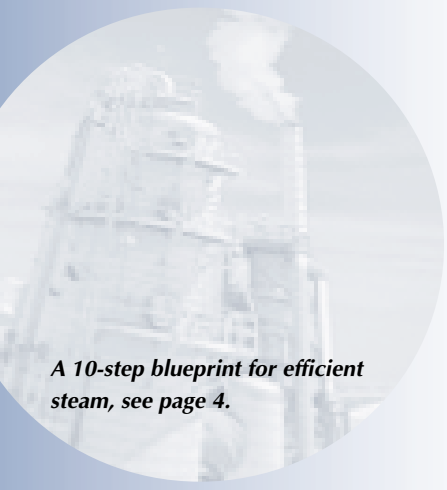

A 10-step blueprint for efficient steam, see page 4.

Second Round of Plant-Wide Assessments Could Lead to Improved Performance for Seven More Sites

In response to the second round of solicitations, DOE's Office of Industrial Technologies (OIT) recently named seven industrial companies to receive cost-shared funding for plant-wide, energy efficiency opportunity assessments that each plant will conduct with their assessment teams. These seven bring the total to 13 awards made by OIT since initiating the plant-wide assessment program last year. Six other projects are either under way or have been completed as a result of the first round of awards made in late 1999.

The new awardees are:

- Akzo Nobel Chemicals of Morris, Illinois
- Anchor Glass Container Corporation of Warner Robbins, Georgia and Jacksonville, Florida
- Appleton Papers Incorporated of West Carrollton, Ohio
- Metlab Company of Wyndmoor, Pennsylvania
- Paramount Petroleum of Paramount, California
- Utica Corporation of Whiteboro, New York
- Weyerhaeuser of Longview, Washington

The companies submitted proposals to OIT through a competitive solicitation held in April 2000. Each proposed a plan for a cost-shared assessment that could guide their plants to substantial energy and cost savings, improved productivity, reduced waste, and enhanced global competitiveness. OIT will share up to half the cost, or

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Petroleum, pulp and paper, and chemicals are among the industries represented by the latest seven companies to receive OIT plant-wide assessment awards.

PIX03222 Photo courtesy of Donald Meadow, TAPPI Journal

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Plant-Wide Assessments Could Lead to Improved Performance

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up to $100,000, with each site to conduct the assessments, which will evaluate energy efficiency opportunities in areas such as:

- Electric motor systems
- Steam systems
- Compressed air systems
- Combined heat and power systems
- Process heating systems
- Process modifications
- Adoption of emerging technologies

In addition to the cost-shared funding, each site will gain benefits such as national recognition and access to the whole range of OIT's emerging technologies, tools, and resources.

Plant-Wide Perspective Gets Noticed

When considering the proposals of 15 companies, OIT focused on those that mapped out a comprehensive, plant-wide method for increasing energy efficiency and reducing environmental emissions. The seven companies selected made clear their plans to adopt best-available and emerging technologies using state-of-the-art tools and information, process engineering techniques, and best practices for operational, plant support, and process systems.

Other Plants Could Benefit

While only some companies receive cost-shared funding from each round of assessment solicitations, many other companies stand to benefit from the results. These assessments will be completed over the next 12 months, and then OIT will compile and publish profiles of each assessment to serve as examples for other plants. The idea is that other facilities will take note of the awardees' experiences and successes and move to adopt and implement similar efficiency measures. ●

Ready for Round Three
The next plant-wide solicitation will begin this fall. To find out more, provide your name, company, and address to Mitch Olszewski by e-mail: zmo@ornl.gov, or fax to (865) 576-0493 (e-mail is preferred). Also, watch for more details in the September issue of Energy Matters *and on Energy Matters Extra at* ***www.oit.doe.gov/bestpractices/explore_library/emextra.*** *Plan to apply or reapply for this cost-shared opportunity.*

About the Awardees

The seven companies to receive cost-shared, plant-wide assessments fall within the scope of OIT's Industries of the Future (IOF) initiative, which focuses on the country's most energy-intensive industries. Working with OIT and partnering with resource and equipment suppliers, engineering firms, and others, these sites are moving toward a strategy to increase their plants' energy efficiency and improve environmental performance.

AKZO NOBEL *will assess energy consumption and the potential for new energy-efficient technologies in a surface chemistry plant.*

Anchor Glass Container Corporation *plans to assess major end uses of steam, motors, cogeneration, and heat recovery at two glass container plants.*

Appleton Papers, Inc.'s *plan is to assess all energy systems and address pollution prevention and process improvements at a paper mill.*

Metlab Company *will measure and monitor energy usage in all major energy-consuming equipment and select efficiency improvement techniques and equipment in a metal heat-treating plant.*

Paramount Petroleum *will focus on thermal efficiency opportunities (an assessment of the electrical usage was previously completed) including combined heat and power opportunities.*

Utica Corporation *will look at all plant energy use in its forging plant from power and fuel costs to process applications.*

Weyerhaeuser Company *will examine the use of steam, water, and thermal energy at an integrated pulp and paper mill using the Successive Design Methodology (SDM).*

Guest Column

Selling an Energy Project to Management

By Steve Bolles, Energy Services Manager, Woodard & Curran, Concord, NH

We have all been there. We attend training workshops or read an article on reducing energy use and get some great ideas to install variable speed drives, improve equipment controls, adjust processes to reduce peak demand, or maybe reduce fan speeds or temperatures during the evening hours.

You take the initiative and do some data collection, savings calculations, and obtain cost estimates from equipment vendors or contractors. You figure you have a winner at a 2-year simple payback and you will get a round of applause at the next management meeting.

What happens next is typical at many facilities.

After your presentation, the operations manager indicates that the proposed new energy-saving equipment will burden his group with the need to learn new technology and could affect system reliability. The maintenance manager adds that he heard that a similar project has caused all sorts of problems at the facility down the road and was a maintenance nightmare. Another manager points out that they may change the process in the future and would rather wait until this issue gets resolved before proceeding. He also mentions that this project is not in the capital budget this year.

What went wrong?

Developing a successful energy project begins with laying the groundwork to support the project. Ideally, it starts with a facility reward program that has a system for pursuing cost-savings projects and compensating employees for their efforts. However, most of the time the effort is accomplished by a motivated individual who takes pride in his job and is inspired by what other facilities have done. To overcome the obstacles that are often encountered, the following "pre-presentation tasks" are recommended to increase your success rate.

1. Get support from a key member of management before pursuing energy projects.

The most successful facility energy evaluations and projects begin with a commitment from management that reducing energy is something they are serious about and are willing to invest time and resources in. Without management's commitment, great energy-saving projects may sit on the shelf for years. It may seem obvious that some of these projects should be pursued immediately, but without support or recognition from management, the extra work and added responsibility may not be worth it to some individuals.

Support from management should also include defining an acceptable cost/benefit ratio and identifying sources to fund the project. Ultimately, financial parameters to evaluate larger projects using a life cycle cost analysis should also be included.

Before presenting an energy project to management, lay the groundwork to support it.

2. Include input from key department staff personnel before presenting to management.

Discussing projects with key maintenance or operations staff provides insight into issues that can be resolved early by modifying the project to accommodate concerns or to include features that will help solve their existing problems. Use case studies to show staff how similar projects were successfully implemented and to help them reach the comfort level needed to accept new technology, or even better, to enthusiastically support the project.

3. Begin with simple projects to increase your chance of success.

Having several small "low-tech" projects that show measurable savings builds management's confidence in cost-saving projects. One of their greatest fears is having "egg on their face" after approving an expensive energy-saving project that does not deliver the projected savings. This is especially important when considering new technologies. Facilities that have started with small energy-saving projects that have measurable results have found themselves in the enviable position of getting fast approval for future cost-saving projects.

4. Bring in outside support to validate your recommendation.

On several occasions when I have been asked to do an energy analysis at a facility, the operator has described to me exactly what needs to be done to reduce energy use, and provided the data needed to calculate the savings and costs. It is clear that the operator only needed me to validate the idea or fill in a few missing details to sell the project to management. Technical or financial assistance often is available through electric utility programs or equipment suppliers. Be sure to contact the local utility to determine what potential financial incentives are available to improve your project's cost effectiveness. DOE BestPractices software such as MotorMaster+ and Pump System Assessment Tool (PSAT) can also provide support for savings calculations.

5. Plan for the unexpected.

Project savings are often scrutinized more than the estimated cost during the initial project development. However, for a successful project, the cost effectiveness depends on both figures equally. The old adage that a project will take "twice as long and cost twice as much" can apply when a project includes new technology, sophisticated controls, or will be interfaced with existing equipment. Cost estimates for potential projects should include the method of project delivery (in-house project implementation, design-build, design-bid-build, or even design-build-operate), hard numbers from equipment suppliers, engineering, and time for meetings, start-up, and troubleshooting. A 20% contingency on top of firm numbers may be appropriate for some projects.

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Selling the Systems Approach to Steam Efficiency

By Christopher Russell, Alliance to Save Energy, Washington, DC

Suppose you are planning to present a steam efficiency idea to management. Let's say you have developed a comprehensive upgrade package for your steam distribution system—including traps, valves, insulation, and monitoring controls. You have done the math and know the project will result in respectable cost savings—something that will definitely be on the minds of financial decision-makers.

Will management see your proposed project as a diversion of investment capital away from direct production assets? Or will they instead understand how your proposal adds to the firm's primary corporate needs, including productivity, plant reliability, and cost containment?

Steam systems are crucial to many industrial operations, but they often suffer from poor maintenance when companies prioritize direct production over "support" functions like facility maintenance. It might be a good idea to focus your efforts on convincing the financial decision-makers that diligent steam system maintenance is a consistent and predictable expense, while the costs associated with poor maintenance are unpredictable and potentially catastrophic.

Present the total system approach to steam efficiency and its plant-wide benefits.

Now, thinking in terms of a systems approach, your pitch to management would be that the company consider the steam system's entire function—generation, distribution, end-use, and recovery—not just the boiler. This, you can say, ensures that plant operations are a coordinated process, and not subject to random or counterproductive measures. You might add that the real link between steam efficiency and corporate goals is the dollars-and-cents impact that efficiency provides. Everyone—from the boardroom to the worker on the plant floor—can appreciate efficiency efforts better if the benefits are expressed in financial terms. Finally, the total-system framework is a practical way to simultaneously engage technical, managerial, and behavioral resources, all of which are necessary to maximize the value of steam efficiency.

A 10-Step Blueprint for Efficient Steam

What management must envision is that the rewards derived from steam efficiency require a dedication of resources. To maximize technical dimensions, it will take human know-how and initiative. The process must have top-level support to get started and involvement from personnel at all levels to attain an optimized steam system.

Involvement at many levels—technical, managerial, and behavioral—helps a plant achieve steam system efficiency.

Use the 10 steps below as a blueprint for mobilizing technical, behavioral, and managerial resources to achieve steam efficiency.

1. **Identify your options.** Inventory the components of the steam system and the services they provide. Survey the system's energy usage. Recognize opportunities to standardize hardware applications, especially steam traps, valves, and other consumable items. This allows you to know the system, its limitations, and the demands made on it. Standardization reduces the complexity and expense of inventory control and helps to avoid the cost and disruption of hardware misapplication.
2. **Prioritize the options.** Start by pursuing the options that provide the largest ratio of benefits to costs. This allows implementation to proceed in phases. The returns from one phase generate savings that pay for the next phase. Phases also allow facility managers and staff to progress on the learning curve.
3. **Determine a dollar impact for the best options.** Use the findings of the system's energy survey and potential energy savings to calculate the concurrent dollar savings. Include metrics such as avoided net expenses (or net contribution to operating income), return on investment (ROI), and payback. The expression of efficiency savings as dollars and cents is a common denominator that will be well understood by facility managers, staff, and top management.
4. **Ensure support from above and within.** Top management should assure the plant manager that it has the resources it needs to pursue efficiency implementation. Management should also communicate the expected effort, benefits, and rewards for the maintenance staff. These actions ensure buy-in and motivation at all levels.
5. **Train staff and offer incentives for achieving results.** Establish criteria that link results to staff accomplishments. Training is critical. Incentives greatly assist in achieving the staff buy-in.
6. **Develop a maintenance discipline.** Use the system overview from the energy survey to prepare a schedule for testing, verification, and replacement. This becomes the driver of maintenance duties and discipline and is a tool for planning inventory purchases and labor use.
7. **Monitor operations.** Put into daily practice the schedule of maintenance duties. Empower staff to follow this program. Records generated through diligent maintenance eventually pay for themselves and "fingerprint" conditions that precede system failures.
8. **Demonstrate results.** Record and demonstrate to top managers the savings and related benefits brought by the efficiency implementation. For example, document net savings on fuel expenditures. Use financial measures such as ROI to illustrate the impact. Account for indirect savings. These results show benefits such as increased productivity and avoided downtime, avoided health and safety costs, and emissions compliance.
9. **Reward those who make the results possible.** Reward staff for generating positive results. Bonuses, awards, and

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BestPractices Tools

Selling Your Project to Management? Use the Right Tools!

How can you persuade management to invest in your energy- or cost-saving project? Do your homework and take advantage of BestPractices tools and resources. Before presenting your ideas, gather as much information as possible about the project's potential benefits. Obtain cost estimates and calculate productivity gains and energy costs savings. It also helps to provide examples of successful projects that are similar to yours. Explore the BestPractices Web site at **www.oit.doe.gov/bestpractices** to find many sources that can help you make your case. Below are some of those sources.

Software and Databases

You can find information about or download software and databases to help you find savings potential through efficient system management. For example:

- **ASDMaster** assists users in the proper application of adjustable speed drives (ASDs). The software is available for purchase from the Bonneville Power Association. Learn about its features and how to order it on the BestPractices web site.
- **3E Plus** calculates the optimal thickness of industrial insulation.
- The popular **MotorMaster+** energy-efficient motor selection software makes it easier for you to manage electric motor-driven systems by allowing comparison of repair vs. replace options, savings analysis, and storage and retrieval of testing and maintenance data.
- **Pump System Assessment Tool (PSAT)** software helps industrial users assess the efficiency of pumping system operations.
- **The Industrial Assessment Center (IAC) Database** contains efficiency recommendations made to small and mid-size manufacturers by 30 university-based IACs.

Learn more about these software and database tools on the BestPractices Web site by selecting **Software and Databases.**

Case Studies

Review BestPractices case studies to select any that may be similar to your project. Find out what other companies and municipalities have done to make energy savings improvements and how they have done it. Include them in your presentation to demonstrate that there are proven technologies currently being applied in successful projects. To find BestPractices case studies, select **Explore our Library** on the BestPractices Web site.

Technical Publications

Access a wide range of technical information on buying, maintaining, and assessing industrial systems and components. You'll find helpful "how-to" publications such as technical fact sheets, tips sheets, and handbooks, as well reports that provide an overview of energy efficiency opportunities. The collection of technical publications is accessible when you **Explore our Library** on the Best Practices Web site.

Remember, the Office of Industrial Technologies (OIT) Clearinghouse is another way to access industrial energy efficiency materials. The Clearinghouse's knowledgeable staff provides answers to technical questions on topics such as motors, steam, and compressed air systems. Contact the Clearinghouse at (800) 862-2086 or visit **www.oit.gov/clearinghouse.** ●

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recognition help to retain staff and ensure the continued capture of efficiency opportunities.

10. **Share the news.** Document and report savings to top management and directors. Demonstrated savings from steam efficiency will resonate positively with the company decision-makers and shareholders.

Understanding the potential for savings might give management the incentive to embrace steam efficiency. The total system approach is a fundamental means to identify and prioritize efficiency opportunities and implement measures. The 10-step blueprint offered here is a tool for organizing the technical, behavioral, and managerial roles that make implementation effective. While the focus here is steam efficiency, these might also be the steps for implementing the systems approach plant-wide. ●

Contact Christopher Russell at: crussell@ase.org.

Guest Column

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6. Present your project.

Projects can be presented as stand-alone efforts or as part of a comprehensive energy project with multiple recommendations developed from a facility energy study. Ultimately, each project should be presented in a 1- to 2-page project profile called an energy conservation measure (ECM). Projects can also be identified as operational measures (OM) when minimal investment is required, or energy supply measures (ESM) when cogeneration or rate schedule changes are pursued. The project profile typically includes a brief description of the project, implementation steps, and a project cost and savings summary. It is also important to include or make available more in-depth calculations, equipment cut sheets, and cost spreadsheets.

These steps represent a sample of what you can do to increase your success rate to move an energy project forward. Additional data collection, financial analysis, development of a performance contract request for proposal, and savings monitoring and verification may also be needed to fully develop a project. ●

Steve Bolles is an energy consultant with Woodard & Curran in Concord, NH, and is a PSAT workshop speaker for DOE. He specializes in working with municipalities and industry to reduce energy costs at water and wastewater facilities. Contact him at sbolles@woodardcurran.com.

Make Your Presentation Shine

By following the steps above, your proposed energy project could gain the edge with management. After all, you have taken the time to assess an opportunity for improvement and gather the technical details that support the idea. Now take the time to polish your skills for a presentation that helps you connect with your audience and sell your idea. To help you prepare for that face-to-face meeting with the corporate decision-makers, check out the feature article "So You're Giving a Presentation" on Energy Matters Extra at ***www.oit.doe.gov/bestpractices/explore_library/emextra.*** *Take some tips on how to deliver an impeccable presentation and convey your idea with confidence.*

Performance Optimization Tips

Selling, with Humility

By Don Casada, OIT BestPractices Program

A Question of "I Don't Know"

I was recently involved in a test given to several engineers, all of whom I regard as knowledgeable, sharp folks. One of the questions was multiple choice. Of the four available choices, three had numerical values. The fourth possible answer, "I don't know," which was the correct one, was selected by only four of twenty-one engineers. Afterwards, several said that they would have selected an answer like "Insufficient information given" if that had been a choice. Clearly, there was a psychological barrier to saying, "I don't know."

Has Humility been Humbled in this Hour?

In a culture where values trump virtues,[1] when "I am the greatest" appears to have displaced "I am meek and lowly," and where self-esteem has moved beyond the noble idea of individual dignity and run amuck, has humility been hastened to the hinterlands?

I thought it would be useful to critique this present age by showing how humility was a commonly practiced virtue in ages past. But I found that my perspective, as is often the case, was narrow and limited (had to throw in a little humility of my own, so you'd think I knew what I was talking about). Human nature is, as always—human nature.

"There are some things which men confess with ease, and others with difficulty."[2]

So said Epictetus, a first-century Roman stoic philosopher, in referring to the fact that we are more apt to acknowledge certain personal traits that carry generally negative connotations than others. Lack of understanding is one trait we are particularly not apt to confess, Epictetus noted.

"What does humility have to do with Performance Optimization, let alone the theme of this issue of *Energy Matters*, Selling an Energy Efficiency Project to Management?" you might ask.

Let me, in turn, ask you: Why are you interested in energy efficiency and performance optimization? Perhaps one of the following fits:

a. You've convinced yourself that global warming is both factual and manmade.
b. You take the position that stewardship of resources is simply commonsensical.
c. The boss told you to.
d. You're in it because there's a buck to be made.

Truth be told, several of the responses fit most of us. Regardless of your underlying principles and ultimate goals, let me try to convince you that humility is a critical virtue in the pursuit of performance optimization and energy efficiency.

Honoring Humility

William J. Bennett's volume on virtues[3] included the writings of many on basic virtues, such as self-discipline, work, courage, and honesty. Humility was not a named virtue, but I argue that it both weaves its way through and springs from other virtues, if they are practiced at their highest levels. Let's talk about humility in the context of two of Bennett's virtues and energy efficiency.

Humility and Courage

First, consider courage. If I were listening to a presentation in the presence of competitive peers, and something was covered that I didn't understand, which attribute would give me the courage to ask a question—humility or pride?

One of the most difficult challenges that many of us face is recognizing our need for help and then seeking it. There are many energy-saving ideas conceived by engineers that fail to get funded (or even worse, are funded and then fail to deliver the promises made) because somewhere along the way, critical information or perspective was missed. On page 3 of this issue, Steve Bolles uses an example where an energy-saving proposal is rejected because of the failure to talk with operations and maintenance about historical experiences and practical considerations. It takes courage borne on the wings of humility for an engineer to ask an operator or maintenance mechanic for advice. In Steve's example, humiliation could have been avoided by a little humility.

Humility and Honesty

Second, consider honesty. Humility is a natural consequence of an honest and mature assessment of ourselves.

To sell an energy-saving project, detailed technical data, sophisticated cost analyses, polished presentations, and confident manners certainly help. But demonstrated successes are the best assets we have, not only in selling the project, but also in identifying the opportunity to begin with. Those successes can be personal and/or collective.

At the personal level, if an individual has previously predicted and then produced energy savings, a level of trustwor-

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Thoughts on Knowledge, Wisdom, and Humility

Genius may have its limitations, but stupidity is not thus handicapped. —Elbert Hubbard

Knowledge comes, but wisdom lingers. —Lord Tennyson

The trouble with the world is that the stupid are cocksure and the intelligent are full of doubts. —Bertrand Russell

If written directions alone would suffice, libraries wouldn't need to have the rest of the universities attached. —Judith Martin

Before God we are all equally wise— and equally foolish. —Albert Einstein

Knowledge is proud that he has learn'd so much; Wisdom is humble that he knows no more. —William Cowper

I don't know. —The simple and the wise

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thiness is gained. Many can predict, but few can produce without help from others. Although it takes the courage of humility to ask for help, our likelihood of success is much greater when we do. And isn't a product that matches the promise the ultimate demonstration of honesty?

At the collective level, we must insist on honest technical exchange. If we're interested in furthering energy efficiency, we need to write corroborating remarks about accurately presented information and critique that which misleads. A spirit of humility helps us recognize that in our individual successes, we are indebted to basic truth revealed by others. Repayment of that debt requires that we promote dependable information and refute bogus claims.

Humility: A Harbinger of Success

Ironically, in the case of the quiz mentioned earlier, saying "I don't know" was the best indicator of who in fact did know. Three of the four individuals who correctly answered "I don't know" answered every other question correctly, and the fourth missed only one, a success rate that was much higher than the average.

The moral of this anecdote is that humility just may be the preeminent indicator of success. ●

E-mail Don Casada with questions or comments at: doncasada@icx.net.

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[1] *Forget Values, Let's Talk Virtues,* column by George Will, May 25, 2000.
[2] *The Discourses,* Epictetus
[3] *The Book of Virtues,* William J. Bennett, Simon & Schuster, 1993.

Letters to the Editor

Energy Matters welcomes your typewritten letters and e-mails. Please include your full name, address, organization, and phone number, and limit comments to 200 words. Address correspondence to:

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Golden, CO 80401
E-mail: michelle_sosa-mallory@nrel.gov

We publish letters of interest to our readers on related topics, comments, or criticisms/corrections of a technical nature. Preference is given to letters relating to articles that appeared in the previous two issues. Letters may be edited for clarity, length, and style.

To the Editor:

After reading Don Casada's article in the March/April 2000 edition of Energy Matters, I have two questions:

1. You mentioned it was the 4th in a series of articles. How can I receive copies of the other three articles?

2. What was the equation used to determine the head, given the pressure and distance that the gauge is located above the fluid level?

James D. Kirsch, Manager of Engineering
High Plains Power, Inc.
Thermopolis, Wyoming

Don replied:

To answer your first question, you can view or download previous versions of Performance Optimization Tips from Energy Matters Extra at **www.oit.doe.gov/bestpractices/explore_library/emextra.**

Second, the calculation of pump head is defined in the July 1999 article (the 2nd in this series).

From a practical standpoint, with ambient temperature water (i.e., specific gravity of 1.0), the pressure component of the head is (discharge pressure – suction pressure) times 2.31.

The value 2.31 is a conversion factor to go from psig to feet of head, and is developed as follows:

$$\left(\frac{144\ \text{in}^2}{\text{ft}^2}\right) \div \left(\frac{62.3\ \text{lb}}{\text{ft}^3}\right) = 2.31\ \frac{\text{ft}}{\text{psi}}$$

In this case, the discharge pressure is 68 psig and suction pressure at the water surface is 0 psig, so the differential is 68 – 0 = 68 psig. Multiplying 68 times 2.31 ft/psi gives 157 ft. Adding the 3-foot elevation difference between the suction and discharge pressure reference points gives a combined pressure and elevation head of 160 ft.

What is left to account for is the difference in velocity head, $V^2 \div 2g$, at the suction and discharge. To get that, we need velocity, which we can get from the flow rate.

Ignoring the velocity head component for the first iteration, we read 2400 gpm from the reference curve at 160 ft (pressure plus elevation heads). In a 12-inch diameter discharge header, 2400 gpm corresponds to almost 7 ft/sec. The velocity head at 7 ft/sec is:

$$\frac{\left(7\ \frac{\text{ft}}{\text{s}}\right)^3}{2 \times \left(32.2\ \frac{\text{ft}}{\text{s}^2}\right)} = 0.8\ \text{ft}$$

The velocity at the water level in the suction tank is essentially 0, so about a foot of velocity head would have to be added to the 160 ft. Iteration may be needed to settle on the first estimate. To be more accurate we should also estimate the head losses from the pump discharge to the discharge pressure measurement point and account for them.

A pump head calculator is included in free Pump System Assessment Tool (PSAT) software, downloadable from **www.oit.doe.gov/bestpractices/software_databases/software.shtml.** ●

ENERGY MATTERS EXTRA

Take a look the at July/August edition of Energy Matters Extra for more on selling an energy-efficient project to management. In addition to a feature that offers tips on making an effective presentation, find helpful resources on finance for nonfinancial managers and how to make your case to managers from a business perspective.

Another highlight is "How to Avoid Taking a Bath on Energy Costs," from the American Water Works Association's *Opflow* magazine 25th Anniversary Edition. This article, named by *Opflow* as one of its 12 best ever published, suggests how municipal facilities can reduce the enormous cost of moving municipal water by taking energy efficiency measures. We're proud to say that one of the article's coauthors is Julia Oliver of DOE.

Visit Energy Matters Extra at **www.oit.doe.gov/bestpractices/explore_library/exmextra.** ●

Coming Events

Capturing the Value of Steam Efficiency

- September 15 in Charlotte, NC

Call the OIT Clearinghouse at (800) 862-2086 for information.

Fundamentals of Compressed Air Systems

- September 7 in Yakima, WA
- September 12 in Bend, OR
- September 14 in Eatontown, NJ
- September 27 in Boise, ID
- October 11 in Longview, WA

Call the OIT Clearinghouse at (800) 862-2086 for information.

Pump Systems/Pump System Assessment Tool Workshop (PSAT)

- September 11 in Louisville, KY, Pump Users Expo

Call Vestal Tutterow at (202) 484-0884, ext. 108 for information.

4th OIT Expo: "Global Competition: Challenges and Solutions"

- February 19-21, 2001 in Washington, DC

Call the OIT Clearinghouse at (800) 862-2086 and watch for more information in upcoming issues of *Energy Matters.*

To keep up-to-date on OIT training and other events, check the calendar regularly on Energy Matters Extra at ***www.oit.doe.gov/bestpractices/explore_library/emextra.***

BestPractices

The Office of Industrial Technologies (OIT) BestPractices initiative and its *Energy Matters* newsletter introduces industrial end users to emerging technologies and well-proven, cost-saving opportunities in motor, steam, compressed air, and other plant-wide systems. For overview information and to keep current on what is happening office wide, check out the newsletter—The OIT Times—at **www.oit.doe.gov/oit-times.**

Information Clearinghouse

Do you have questions about using energy-efficient process and utility systems in your industrial facility? Call the OIT Information Clearinghouse for answers, Monday through Friday 9:00 a.m. to 8:00 p.m. (EST).

HOTLINE: (800) 862-2086

Fax: (360) 586-8303, or access our homepage at www.oit.doe.gov/clearinghouse.

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